

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A cell culture chamber for a closed cell culture system serving to continuously supply different cells with liquid nutrient media, growth factors, and gases, the cell culture chamber comprising:

a membrane plate with a light-transmissive membrane serving to accommodate at least one cell culture, the membrane plate including a number of passages for supplying liquid, gassing and sensor connection to the cell culture chamber;

a first transparent glass pane which is placed on one side of the membrane plate;

a viewer on the one side configured to observe the inside of the cell culture chamber;

a heater disposed between the first transparent glass pane and the viewer, the heater including a hole therethrough to allow the viewer to observe the inside of the cell culture chamber;

a heating control system including an infrared temperature measuring device remote from the cell culture chamber, the infrared temperature measuring device configured to continuously measure a temperature within the cell culture chamber, the heating control system configured to receive continuous temperature measurements from the infrared temperature measuring device and, using the continuous temperature measurements, control the heater to automatically maintain a substantially constant temperature within the cell culture chamber;

a cover plate disposed on the opposite side of the membrane plate and including an incorporated, second transparent glass pane; and

a light source on the opposite side configured to illuminate the inside of the cell culture chamber from this opposite side through the second pane.

2. (Previously Presented) The cell culture chamber according to claim 1 wherein the first transparent glass pane abuts an underside of the membrane.

3. (Previously Presented) The cell culture chamber according to claim 1 wherein the cover plate forms a cell culture chamber cap with the second transparent glass pane, such cell culture chamber cap being fixed in a releasable manner on the upper side of the membrane plate.

4. (Previously Presented) The cell culture chamber according to claim 1 wherein the cell culture chamber cap as well as the underside of the membrane plate are formed with an opening for the accommodation and fixation of the respective glass panes.

5. (Previously Presented) The cell culture chamber according to claim 1 wherein the glass panes are sapphire glass panes.

6. (Previously Presented) The cell culture chamber according to claim 1, further comprising, for the fixation of the membrane on the membrane plate:

a retaining ring that can, with the aid of the cell culture chamber cap, be pressed on the periphery of the membrane so that the latter can be fixed.

7. (Previously Presented) The cell culture chamber according to claim 1, further comprising, on the side of the cell culture chamber cap facing the membrane plate:

a joint ring that aseptically closes the cell culture prepared on the membrane when the cell culture chamber is closed.

8. (Previously Presented) The cell culture chamber according to claim 1, further comprising:

a gas supply configured to supply a constant, continuous gassing via a suitable compartmentalization of the cell culture chamber via the respectively assigned passages with freely selectable concentrations of the most various gases.

9. (Currently Amended) The cell culture chamber according to claim 1, further comprising, for fixing the membrane plate at its side opposite the cell culture chamber cap, an assigned retainer plate for integration in the cell culture system, this retaining plate being

equipped with an integrated including the heater for the cell culture chamber, wherein the heater is integrated with the retaining plate.

10. (Previously Presented) The cell culture chamber according to claim 9 wherein the heater is an electrical heater.

11. (Previously Presented) The cell culture chamber according to claim 1 wherein the membrane is a gas-permeable biofoil.

12. (Previously Presented) The cell culture chamber according to claim 1 wherein the membrane plate includes metal.

13. (Currently Amended) The cell culture chamber according to claim [[13]] 12 wherein the membrane plate includes stainless steel.

14. (Previously Presented) The cell culture chamber according to claim 1 wherein the number of passages includes a greater number of passages above the membrane than below the membrane.

15. (Currently Amended) A system comprising:

a cell culture chamber including:

a membrane plate including a plurality of passages configured to supply liquid, supply gassing, or provide sensor connection to the cell culture chamber;

a light-transmissive membrane attached to the membrane plate, the membrane configured to accommodate at least one cell culture;

a first transparent glass pane disposed on a first side of the membrane plate, wherein the first transparent glass pane abuts an underside of the membrane; and

a heater abutting a side of the first transparent glass pane opposite the membrane, the heater configured to allow observation of the inside of the cell culture chamber through the first transparent glass pane; and

a cover plate disposed on a second side of the membrane plate opposite the first side, the cover plate including an incorporated, second transparent glass pane, wherein the second transparent glass pane abuts an underside of the membrane; and

a heating control system including an infrared temperature measuring device remote from the cell culture chamber, the infrared temperature measuring device configured to continuously measure a temperature within the cell culture chamber, the heating control system configured to receive continuous temperature measurements from the infrared temperature measuring device and, using the continuous temperature measurements, control the heater to automatically maintain a substantially constant temperature within the cell culture chamber.

16. (Previously Presented) The system of claim 15, comprising a viewer on a first side of the cell culture chamber configured to observe the inside of the cell culture chamber.

17. (Previously Presented) The system of claim 15, comprising a light source on a second side of the cell culture chamber opposite the first side, the light source configured to illuminate the inside of the cell culture chamber.

18. (Previously Presented) The system of claim 17, wherein the light source is configured to illuminate the inside of the cell culture chamber through the membrane.

19. (Previously Presented) The system of claim 15, wherein the membrane plate includes metal.

20. (Previously Presented) The system of claim 15, wherein the membrane plate includes stainless steel.